AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A method of transmitting a bit stream in a communication network from a first terminal to a second terminal, the method comprising:

(a) coding source data into the bit stream using a predetermined type of coding;

(b) adding a header from each communication protocol layer to a payload while transmitting the bit stream coded in operation (a) to each communication protocol layer; and

(c) transmitting, from the first terminal to the second terminal, the header separately from the bit stream transmitted in the operation (b),

wherein in the operation (c), a bit stream, to which header information has been added by undergoing each communication protocol layer, is transmitted in an unacknowledged mode protocol, and only the header information in the bit stream is separately transmitted in an acknowledged mode protocol; and

wherein, when a number of times of re-transmission of a bit stream transmitted in an acknowledged mode protocol is equal to or less than a predetermined number of times, the bit stream, which has been transmitted in an unacknowledged mode protocol, is transmitted in an acknowledged mode protocol.

2. (currently amended): A method of transmitting a bit stream in a communication network, the method comprising:

(a) coding source data into the bit stream using a predetermined type of coding;

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(b) adding a header from each communication protocol layer to a payload while transmitting the bit stream coded in the operation (a) to each communication protocol layer; and

(c) separately transmitting the payload and the header,

wherein in the operation (c), a payload in a bit stream, which has passed through each communication protocol layer, is transmitted in an unacknowledged mode protocol, and only the header information is separately transmitted in an acknowledged mode protocol; and

wherein, when a number of times of re-transmission of a bit stream transmitted in an acknowledged mode protocol is equal to or less than a predetermined number of times, the bit stream, which has been transmitted in an unacknowledged mode protocol, is transmitted in an acknowledged mode protocol.

3-4. (canceled).

5. (canceled).

6. (canceled).

7. (previously presented): The method of claim 1, wherein the header information in the bit stream is simultaneously transmitted in an acknowledged mode protocol with the bit stream.

8. (previously presented): The method of claim 2, wherein the header information in the bit stream is simultaneously transmitted in an acknowledged mode protocol with the payload.

9. (previously presented): The method of claim 1, wherein the header information in the bit stream is simultaneously transmitted in the unacknowledged mode protocol with the bit stream.

10. (previously presented): The method of claim 1, wherein, when a transmission error occurs, the bit stream, to which headers have been added by undergoing each communication protocol layer, is re-transmitted in an acknowledged or unacknowledged mode protocol.

11. (previously presented): The method of claim 1, wherein the acknowledged mode protocol is a transmission control protocol (TCP), and the unacknowledged mode protocol is a user datagram protocol (UDP).

12. (previously presented): The method of claim 2, wherein the acknowledged mode protocol is a transmission control protocol (TCP), and the unacknowledged mode protocol is a user datagram protocol (UDP).

13. (canceled).

14. (canceled).

15. (original): The method of claim 7, wherein the acknowledged mode protocol is a transmission control protocol (TCP), and the unacknowledged mode protocol is a user datagram protocol (UDP).

16. (original): The method of claim 8, wherein the acknowledged mode protocol is a transmission control protocol (TCP), and the unacknowledged mode protocol is a user datagram protocol (UDP).

17. (previously presented): The method of claim 1, wherein the acknowledged mode protocol re-transmits Internet protocol (IP) packets or radio link protocol (RLP) packets.

18. (previously presented): The method of claim 2, wherein the acknowledged mode protocol re-transmits Internet protocol (IP) packets or radio link protocol (RLP) packets.

19. (canceled).

20. (canceled).

21. (original): The method of claim 7, wherein the acknowledged mode protocol re-transmits Internet protocol (IP) packets or radio link protocol (RLP) packets.

22. (original): The method of claim 8, wherein the acknowledged mode protocol re-transmits Internet protocol (IP) packets or radio link protocol (RLP) packets.

23. (original): The method of claim 9, wherein the acknowledged mode protocol re-transmits Internet protocol (IP) packets or radio link layer protocol (RLP) packets.

24. (original): The method of claim 10, wherein the acknowledged mode protocol re-transmits Internet protocol (IP) packets or radio link protocol (RLP) packets.

25. (original): The method of claim 1, wherein the headers are a payload header, a real time protocol (RTP) header, a user datagram protocol (UDP) or transmission control protocol (TCP) header, an Internet protocol (IP) header, a radio link protocol (RLP) header, and a layer 2 (L2) header, which are added after a bit stream is passed through each layer.

26. (original): The method of claim 2, wherein the headers are a payload header, a real time protocol (RTP) header, a user datagram protocol (UDP) or transmission control protocol (TCP) header, an Internet protocol (IP) header, a radio link protocol (RLP) header, and a layer 2 (L2) header, which are added after a bit stream is passed through each layer.

27. (original): The method of claim 1, wherein the payload includes multimedia data.

28. (original): The method of claim 2, wherein the payload includes multimedia data.

29. (currently amended): An apparatus for transmitting a bit stream in a communication network, the apparatus comprising:

an encoder for encoding source data into a bit stream using a predetermined type of coding;

a protocol processing unit for adding a header of each communication protocol layer to a payload while transmitting the bit stream encoded by the encoder to each communication protocol layer; and

a packet processing unit for transmitting the bit stream processed by the protocol processing unit in an unacknowledged mode protocol and separately transmitting only header information in an unacknowledged or acknowledged mode protocol;

wherein, when a number of times of re-transmission of a bit stream transmitted in an acknowledged mode protocol is equal to or less than a predetermined number of times, the bit stream, which has been transmitted in an unacknowledged mode protocol, is transmitted in an acknowledged mode protocol.

30. (currently amended): An apparatus for relaying and receiving a bit stream in a communication network, the apparatus comprising:

an extractor for separately extracting payloads and header information, which corresponds to the header of each layer, while receiving a bit stream and a header information received in an acknowledged or unacknowledged mode protocol in the communication network to each layer;

an error determination processing unit for determining whether the header information extracted by the extractor has error;

a bit stream re-organizing unit for re-organizing a bit stream using the header information extracted by the extractor; and

a decoder for decoding a bit stream re-organized by the bit stream re-organizing unit,

wherein only the header information is transmitted in an acknowledged mode protocol; and

wherein, when a number of times of re-transmission of a bit stream transmitted in an acknowledged mode protocol is equal to or less than a predetermined number of times, the bit stream, which has been transmitted in an unacknowledged mode protocol, is transmitted in an acknowledged mode protocol.

31. (original): The apparatus for relaying and receiving a bit stream in a communication network of claim 30, wherein the error determination processing unit also requests re-transmission if it is determined that the header information has error.

32. (currently amended): A computer-readable recording medium having embodied thereon a computer program for performing a method of transmitting a bit stream in a communication network, the method comprising:

(a) coding source data into the bit stream using a predetermined type of coding;

(b) adding a header from each communication protocol layer to a payload while transmitting the bit stream coded in the operation (a) to each communication protocol layer; and

(c) transmitting the header separately from the bit stream transmitted in the operation (b),

wherein in the operation (c), a bit stream, to which header information has been added by undergoing each communication protocol layer, is transmitted in an unacknowledged mode protocol, and only the header information in the bit stream is separately transmitted in an acknowledged mode protoco; and

wherein, when a number of times of re-transmission of a bit stream transmitted in an acknowledged mode protocol is equal to or less than a predetermined number of times, the bit stream, which has been transmitted in an unacknowledged mode protocol, is transmitted in an acknowledged mode protocol.

33. (currently amended): A computer-readable recording medium having embodied thereon a computer program for performing a method of transmitting a bit stream in a communication network, the method comprising:

(a) coding source data into the bit stream using a predetermined type of coding;

(b) adding a header from each communication protocol layer to a payload while transmitting the bit stream coded in the operation (a) to each communication protocol layer; and

(c) separately transmitting the payload and the header,

wherein in the operation (c), a payload in a bit stream, which has passed through each communication protocol layer, is transmitted in an unacknowledged mode protocol, and only the header information is separately transmitted in an acknowledged mode protocol; and

wherein, when a number of times of re-transmission of a bit stream transmitted in an acknowledged mode protocol is equal to or less than a predetermined number of times, the bit stream, which has been transmitted in an unacknowledged mode protocol, is transmitted in an acknowledged mode protocol.

34-35. (canceled).

36. (canceled).

37. (canceled).

38. (previously presented): The computer-readable recording medium of claim 32, wherein the header information in the bit stream is simultaneously transmitted in an acknowledged mode protocol with the bit stream.

39. (previously presented): The computer-readable recording medium of claim 33, wherein the header information in the bit stream is simultaneously transmitted in an acknowledged mode protocol with the payload.

40. (previously presented): The computer-readable recording medium of claim 32, wherein the header information in the bit stream is simultaneously transmitted in the unacknowledged mode protocol with the bit stream.

41. (previously presented): The computer-readable recording medium of claim 32, wherein, when a transmission error occurs, the bit stream, to which headers have been added by undergoing each communication protocol layer, is re-transmitted in an acknowledged or unacknowledged mode protocol.

42. (previously presented): The computer-readable recording medium of claim 32, wherein the acknowledged mode protocol is a transmission control protocol (TCP), and the unacknowledged mode protocol is a user datagram protocol (UDP).

43. (previously presented): The computer-readable recording medium of claim 33, wherein the acknowledged mode protocol is a transmission control protocol (TCP), and the unacknowledged mode protocol is a user datagram protocol (UDP).

44. (canceled).

45. (canceled).

46. (original): The computer-readable recording medium of claim 38, wherein the acknowledged mode protocol is a transmission control protocol (TCP), and the unacknowledged mode protocol is a user datagram protocol (UDP).

47. (original): The computer-readable recording medium of claim 39, wherein the acknowledged mode protocol is a transmission control protocol (TCP), and the unacknowledged mode protocol is a user datagram protocol (UDP).

48. (previously presented): The computer readable recording medium of claim 32, wherein the acknowledged mode protocol re-transmits Internet protocol (IP) packets or radio link protocol (RLP) packets.

49. (previously presented): The computer-readable recording medium of claim 33, wherein the acknowledged mode protocol re-transmits Internet protocol (IP) packets or radio link protocol (RLP) packets.

50. (canceled).

51. (canceled).

52. (original): The computer-readable recording medium of claim 38, wherein the acknowledged mode protocol re-transmits Internet protocol (IP) packets or radio link protocol (RLP) packets.

53. (original): The computer-readable recording medium of claim 39, wherein the acknowledged mode protocol re-transmits Internet protocol (IP) packets or radio link protocol (RLP) packets.

54. (original): The computer-readable recording medium of claim 40, wherein the acknowledged mode protocol re-transmits Internet protocol (IP) packets or radio link protocol (RLP) packets.

55. (original): The computer-readable recording medium of claim 41, wherein the acknowledged mode protocol re-transmits Internet protocol (IP) packets or radio link layer protocol (RLP) packets.

56. (original): The computer-readable recording medium of claim 32, wherein the headers are a payload header, a real time protocol (RTP) header, a user datagram protocol (UDP) or transmission control protocol (TCP) header, an Internet protocol (IP) header, a radio link protocol (RLP) header, and a layer 2 (L2) header, which are added after a bit stream is passed through each layer.

57. (original): The computer-readable recording medium of claim 33, wherein the headers are a payload header, a real time protocol (RTP) header, a user datagram protocol (UDP) or transmission control protocol (TCP) header, an Internet protocol (IP) header, a radio link protocol (RLP) header, and a layer 2 (L2) header, which are added after a bit stream is passed through each layer.

58. (original): The computer-readable recording medium of claim 32, wherein the payload includes multimedia data.

59. (original): The computer-readable recording medium of claim 33, wherein the payload includes multimedia data.